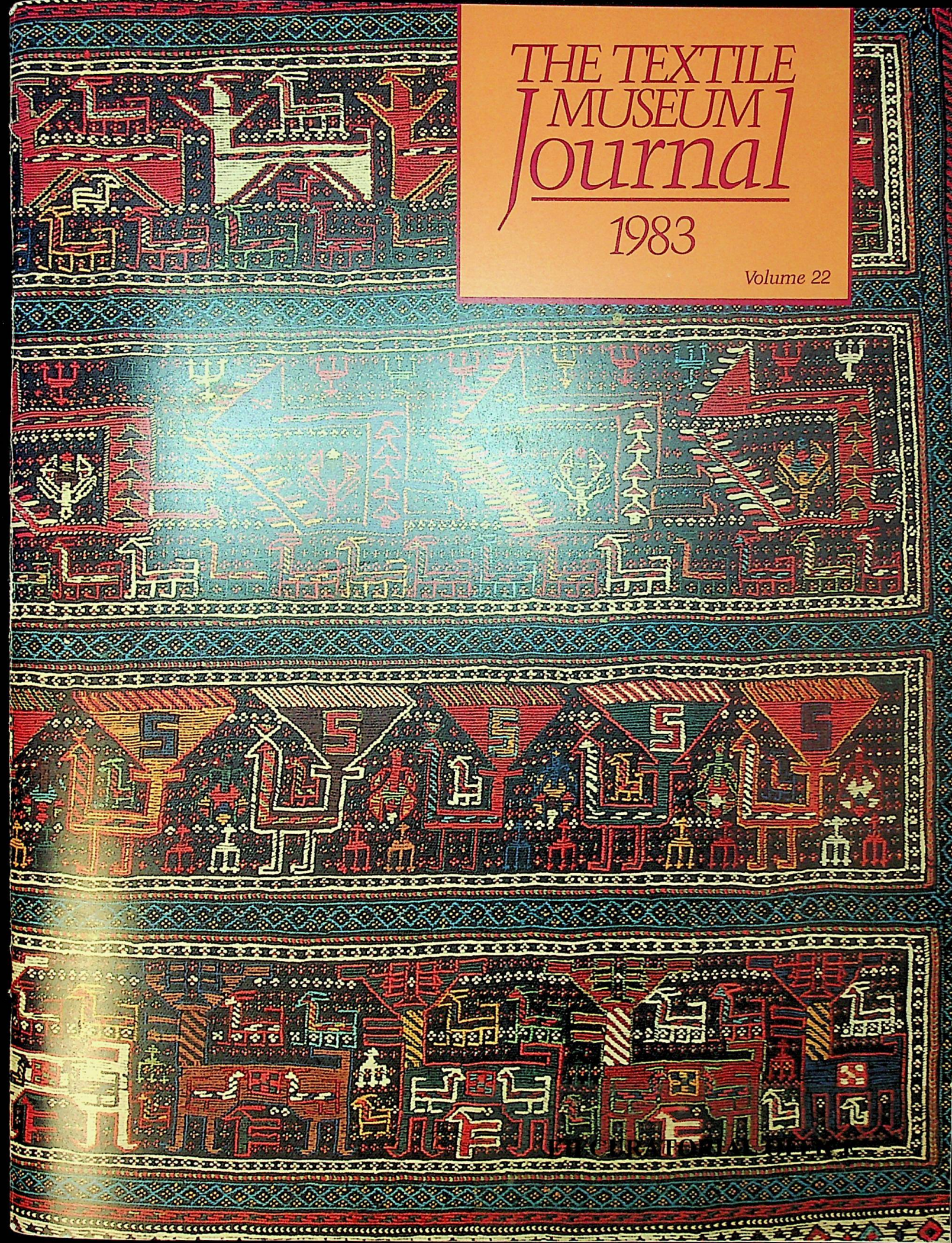


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Cover: Detail of a South Persian horse blanket from the Fars area, probably Qashqai. Arthur D. Jenkins Collection

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Weaving A Cotton Saddlebag On The Santa Elena Peninsula Of Ecuador

JANE PARKER HAGINO AND
KAREN E. STOTHERT

An Historical Perspective

ANDEAN HAND WEAVING IS RELATIVELY well known because of the good preservation of archaeological textiles and because some of the indigenous cultures of the highlands have maintained at least part of their weaving tradition until the present. In contrast, we know very little about textiles or weaving of the coast of Ecuador where cloth is rarely preserved in archaeological sites and where the native population was decimated and deculturated shortly after the Spanish conquest. Hand weaving has had little importance in the recent period on the Ecuadorian coast and it is hardly mentioned in the ethnographic sources. In this article we describe some aspects of an almost-extinct tradition.

THE GEOGRAPHICAL LOCATION

The weaver that we worked with lived all her life in Tugaduaja, a tiny village located on the Santa Elena Peninsula, Guayas Province. The Peninsula encompasses the arid and semi-arid lands west of Guayaquil (Fig. 1). While there is variation across this zone in topography and rainfall, it can be considered culturally ho-

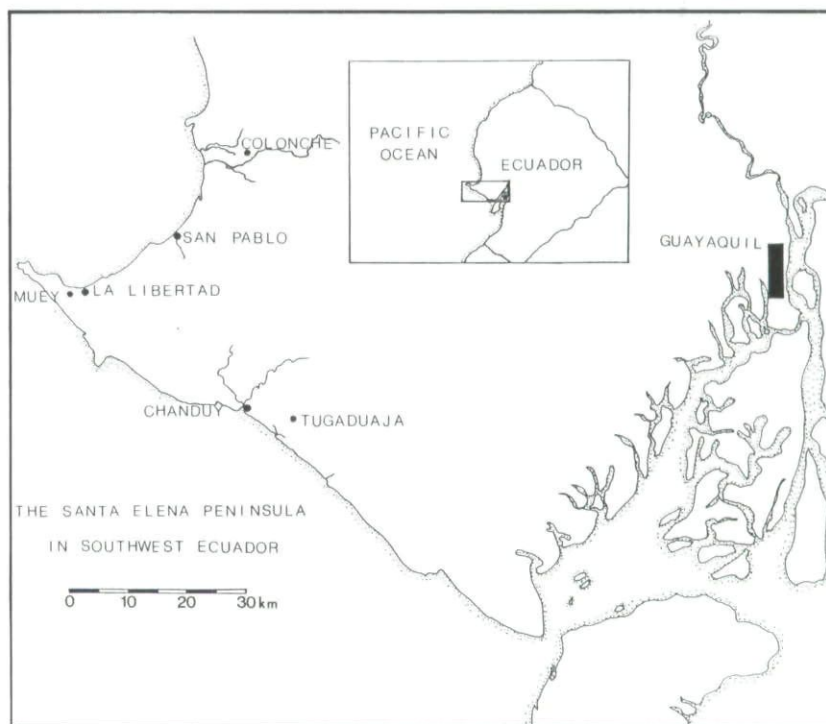


Fig. 1 Map showing the location of towns on the Santa Elena Peninsula, Ecuador.

mogenous. The population has been Spanish-speaking since the 16th century, and today everyone participates in the national, money economy. A huge influx of population in the last two decades makes La Libertad one of the fastest growing urban areas in Ecuador, but traditionally the Peninsula has been sparsely populated with the inhabitants distributed in small villages. Some of these, like Tugaduaja, continue to be refuges for poor people while most of the productive economic activity takes place elsewhere.

PREHISTORIC TEXTILE MANUFACTURE

While textiles are well-preserved in archaeological sites on the arid coast of Peru, the conditions of southwestern Ecuador are destructive to organic remains. The earliest evidence for woven textiles in Ecuador is the impression of plain weave cotton cloth in clay from a late Valdivia site, perhaps 4,000 years old.¹ Small fragments of cotton cloth are occasionally excavated in later archaeological contexts where they have been preserved by contact with metal salts.² Prehistoric looms have not survived, but representations of clothed individuals in ceramic sculptures indicate that textiles were important to the ancient coastal

peoples of Ecuador, and thousands of spindle whorls (spindle weights) in habitation refuse in later archaeological sites attest that spinning was a common domestic task. In addition, the earliest Spanish explorers of the coast of Ecuador observed both men and women dressed in woven cotton garments.³

It is also likely that the giant Indian sailing rafts were powered by sails made of woven cotton cloth.⁴ According to the sixteenth century historian Oviedo y Valdez, the Spanish pilot Bartolomé Ruiz captured one of these sailing rafts off the Ecuadorian coast in 1526. The balsa belonged to traders and was loaded with cotton and wool fabrics, shirts and other kinds of clothing all elaborately decorated and many-colored:

traía muchas mantas de lana y algodón, y camisas y aljulas, y alcaceres y alaremes y otras muchas ropas, todo lo mas de ello muy labrado de labores muy ricas de colores de grana y carmesí, e azul e amarillo, y de todos otros colores de diversas maneras de labores e figuras de aves y animales y pescados y arboledas. . . .⁵

It is believed that these giant rafts came from Salango and Puerto Lopez, not far north of the Peninsula.⁶ There is, then, ample evidence that weaving was an important economic activity on the coast of Ecuador in the late prehistoric period.

THE COLONIAL PERIOD

Historical sources for the Colonial Period show the continuing importance of weaving among the peoples of the coast. A document of the year 1581 lists the tribute owed by the Indians of Colonche, Colonchillo (a town near the point of Santa Elena) and Chanduy (Fig. 1) as pieces of cloth or clothing, maize, salted fish, chickens and lengths of cotton cloth:

Baltasar de Ocampo tiene en la Provincia de los Guancavelicos el pueblo de Goaya y el pueblo de Colonche y Colonchillo, con 145, ind. trib., los cuales pagan 37 ps. y 1 tom., pl. ens.; 84½ piez. de ropa las 60 a 1 ps., 6 tom. ens., y las 24½ a 3 ps. pl. ens.; 84½ han. de maíz, las 48 a 3 tom. y las 36 a 4 tom.; 34 arrobas de pescado salado a 2 tom.; arr.; 253 aves de Cast.; 27 lonas de algodón a 1 ps. cada una. Que todo el tributo suma 338 ps. pl. ens.; y a los precios de la ciudad, 747 ps. pl. corr. . . .

El capitán Alonso de Vera tiene en el pueblo de Chanduy 58 ind. trib., los cuales pagan 1 ps. 1 tom. pl. ens.; 87 lonas, 117 arr. de pescado; 46 aves de Cast. Que monta todo 101 ps., 6 tom. y 3 gr., pl. ens. y a los precios de la ciudad de Guayaquil 346 ps. pl. corr. mar. Y el encomendero ha de dar a los indios todo el algodón que fuere necesario para las lonas.⁷

This source mentions that the *encomendero* (the Spaniard entitled to collect the tribute) was required to give the Indians all the cotton necessary for weaving the fabrics (*lonas*) they paid in taxes.

Documents from the early 17th century report that each tribute-paying Indian of the Peninsula owed the *encomendero* a length of woven, colored cloth, an amount of corn, 2 chickens and 2 hens, but the people of Colonchillo each owed, rather, 18 varas (a length less than a yard) of woven cloth, a quantity of fish and some silver money:

Paga un indio tributario a su incomendero cada año una pieza de mantas de algodón de colores, quatro celemines de maíz, dos pollos y dos gallinas. Este es el tributo ordinario en los pueblos del distrito, pero en el de Colonchillo, pagan lona y mantas de algodón que tienen diez y ocho varas y vale veinte reales; dos arrobas de pescado que valen doce reales, y veinte reales en plata, y al casique veinte reales cada tercio.⁸

. . . las mugeres tegan ropa con que pagan los tributos.⁹

This source states that it was the women of these towns who wove in order to pay the tribute.

It is likely, since the *encomendero* supplied raw cotton to the weavers, that spinning was also part of the process of cloth production in the villages, although it is not specifically mentioned in the documents.

THE RECENT PERIOD

With the establishment of the Spanish *obrajes* or factories for manufacturing cloth, and with the gradual modernization of the Ecuadorian economy, the production of hand-woven cloth lost its importance outside the immediate domestic unit. Writing from observations made in the 1920's, Von Buchwald remarked that the last remaining "pure Indians" on the coast

were fishermen and weavers of straw hats.¹⁰ Hat weaving, usually an occupation of men, persisted as an important cottage industry on the Peninsula until after World War II. I know of no report of the state of the hand-weaving craft in the 19th or 20th centuries on the Peninsula.

Nevertheless, until recently a few women across the region have continued to weave cotton saddlebags, hammocks and tablecloths. The saddlebags (*alforjas*) were of particular importance in the period before World War II because most goods and food moved across the Peninsula on animal back. These weavers worked upon demand and the person placing the order was expected to supply the raw material, formerly raw cotton measured by the pound, but today machine spun cotton thread.

In the 20's and 30's Dr. G.H.S. Bushnell, the late pioneering archaeologist of the Peninsula, had his favorite cotton *alforja* made for him in Muey (Fig. 1), but the last weaver of that town is now very old and rarely weaves. Until just 10 years ago one could have tablecloths made in San Pablo (Fig. 1), but the last hand weaver there has died. Young women have not learned the craft.

We were lucky to find Doña Isabela Lindao Ascencio de Cruz, 72 years of age, living in Tugaduaja where she was born, and still weaving on request. With the increased demand for production, caused by the authors, Isabela, her under-employed, adult son and her husband have all become active in weaving. I suspect that the weft insertion for most of the saddlebags was done by her son. She, however, handles the warping, heddlings, setting up of the loom and the finishing of the textiles.

Isabela employs machine spun thread in her weaving although she knows how to spin and has the equipment for hand spinning. She complains that it is hard to get the native cotton (locally called *algodón criollo*) that she used in the old days, and she simply does not have time to do both spinning and weaving.

The native cotton (*Gossypium barbadense*) is a perennial, tree-like plant which produces fibers in three natural colors that were formerly employed for making the warp stripes in woven cloth. These plants are rarely cultivated today, and the brown and red varieties may be locally extinct. There are also feral cotton plants which produce fiber in the woods even in years that have been too dry for planting the commercial, hybrid cotton species that farmers grow today on the Peninsula.

TABLE 1. WEAVING TERMS OF DOÑA ISABELA

English	Spanish
loom bar	lambo
loom bar rope	templador
shed rod	"palo para hacer los cambios" ¹
heddle rod	palo de pafelar
heddle string	pafelar
batten	macana
pick-up stick	pañador
temple rod	chiquigua
warping board	balsa de urdir
warping post	youca
warping post brace	toca
warp thread	urdimbre
weft thread	"la comida" ¹
pick-up pattern	dibujo

¹ Doña Isabela's expression in lieu of a technical term.

Both the availability of several kinds of cotton and the large amount of information about cotton and cotton growing that informants in the small villages offer support the idea of the antiquity and importance of cotton on the coast. It is also true that much of the knowledge about native cotton and its cultivation is disappearing with the generation that grew up before World War II.

Doña Isabela's weaving vocabulary is very limited (Table 1), probably much reduced because of her lack of contact with other weavers. She is, in fact, totally unaware of other kinds of looms or weaving techniques. The only linguistic clue to the non-Spanish origins of Doña Isabela's weaving is her word for the temple rod, *chiquigua*. This word is not Spanish, but we cannot suggest its probable linguistic affiliation.

The *alforjas* made in Tugaduaja, and until recently in other towns on the Peninsula, are similar to those made in towns near Guayaquil and sold in shops in the city. These weavers use machine spun thread. In Manabí Province, in the small towns between Portoviejo and Rocafuerte, weavers still hand spin cotton, dye their own thread and weave *alforjas* and hammocks on looms identical to the vertical looms of the Peninsula.¹¹ While the *alforjas* of the three regions differ in detail, they are similar in structure, and all resemble the double bags made on the north coast of Peru.¹² These saddlebags follow Spanish designs that became traditional in South America only after the introduction of European pack animals, so they are not good indicators of native ethnic frontiers.

The other items frequently made by hand



Fig. 2 Gavina Liné Tomalá, a native of Muey, spinning cotton in the traditional manner. The wooden spindle with a whorl fashioned from water worn brick, is supported and turned by the fingers of the right hand.

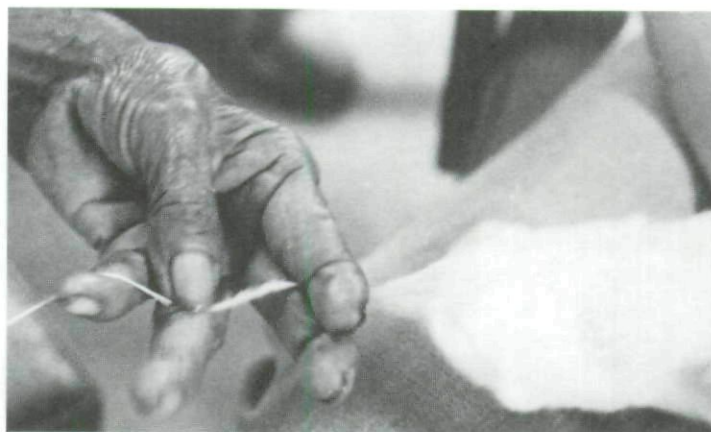


Fig. 3 Doña Gavina draws the cotton fibers from the lap using only the fingers of the left hand as she manipulates the spindle with her right hand.

weavers of the Peninsula are hammocks and *manteles* (small tablecloths or handtowels); these may be similar to prehistoric textiles in that they are flat pieces with simple warp stripes. Only flat pieces of cloth (*piezas de ropa*, *mantas*, and *lonas*) are mentioned in the ethno-historic records cited above, and today the relatively unacculturated peoples of the Ecuadorian coastal plain, the Cayapas and the Colorados, produce only warp-faced cotton textiles.

Some aspects of Isabela's weaving suggest that the techniques may trace back to the pre-Columbian tradition of the Ecuadorian coast. First, the loom that she uses is not of Spanish origin. It is very similar to the loom described by Barrett for the Cayapas, but the Cayapas tie the loom bars perpendicularly to two fixed posts.¹³ In contrast, Doña Isabela puts tension on the warp threads by tying the loom bars to the floor and to the wall beams of her house. This variation may correspond to a change in house type on the Peninsula in the Colonial Period. Archaeological evidence suggests that the houses of the latest prehistoric phase were constructed directly on the ground and had cane and daub walls.¹⁴ The modern campesino houses of the Peninsula are built off the ground on high posts and they have wooden floors and split bamboo walls. We do not know when or why this type replaced the former type.¹⁵

There is good evidence of continuity between the prehistoric past and the present in the traditional spinning techniques. On the Peninsula, cotton is hand-spun using a simple, weighted, wooden spindle and a three-legged stand (*rueca*) to hold the fibers which are

drawn out with the left hand while the right hand manipulates the spindle, holding it below the weight (Figs. 2 and 3).¹⁶ This technique is used by the traditional spinners of Manabí Province and is shown in prehistoric ceramic sculptures from the same region.¹⁷ The Cayapa Indians also prepare cotton fiber and spin in a nearly identical manner.¹⁸ Judging from the data available, the cotton spinning techniques of the coast differ in many details from the wool spinning practices of the people of the Ecuadorian highlands.¹⁹

It is intriguing that Doña Isabela weaves on demand and expects the person placing the order to supply the weaving materials. This arrangement was the basis of traditional and legal reciprocity throughout the Andean Region in the late prehistoric period,²⁰ and was perpetuated by the conquerors in the Colonial Period on the Peninsula.²¹ This kind of arrangement would not be expected of tradesmen in a modern, commercial economy. We authors may be helping to extinguish this traditional system in Tugadua by helping Doña Isabela to sell to dealers in Guayaquil who buy finished products for cash and who do not supply weaving materials.

While some aspects of Doña Isabela's weaving suggest continuity with the prehistoric tradition of southwestern Ecuador, clearly the process of acculturation has altered the techniques, raw materials, products, and the role of the weaver in society. It is likely that within a few years there will be no more hand weavers on the Peninsula, although the craft may survive a little longer if the tourist market is tapped.

KAREN E. STOTHERT

Weaving A Cotton Saddlebag

ETHNOGRAPHIC NOTES

It was my pleasure and good fortune to spend three days in June of 1981 as a guest of the Cruz family in the small village of Tugaduaja. Their home is typical of this region of Ecuador and rests on stilts approximately three to three and a half meters off the dry, sandy ground. The three room house comprising a kitchen, bedroom, and living room, is a one-wall construction of split bamboo with a facade of concrete blocks. The roof is thatched and the floor is made of broad wooden planks, dark and well polished by daily use (Fig. 4).

The purpose of my visit was to study the weaving techniques of Doña Isabela Lindao de Cruz, a woman in her early seventies who shares the bamboo house with her husband, their son and his wife, and two young grandsons. Doña Isabela has been a weaver since the age of fifteen when she learned the art of weaving from her mother and aunts who had learned to weave from their mother. Although Doña Isabela had two sisters, she alone took up the trade of weaving.

Doña Isabela's repertoire of handwoven items includes the saddlebag (*alforja*), hammock (*hamaca*), belt (*cinturon*), small tablecloth, used also as a handtowel (*mantel*), and large or small tote bag (*bolsa para carga*). The items most often requested are the *alforja*, originally designed as a saddlebag for use on a burro but now modified for bicycles, and the hammock, omnipresent in Ecuadorian homes of the coastal region, although rarely hand woven today.

Today, weaving thread is primarily cotton

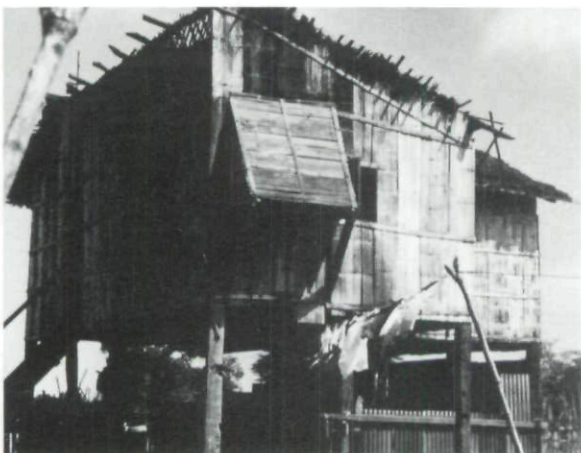


Fig. 4 Split bamboo and cinder block house belonging to the Cruz family in Tugaduaja, Ecuador.

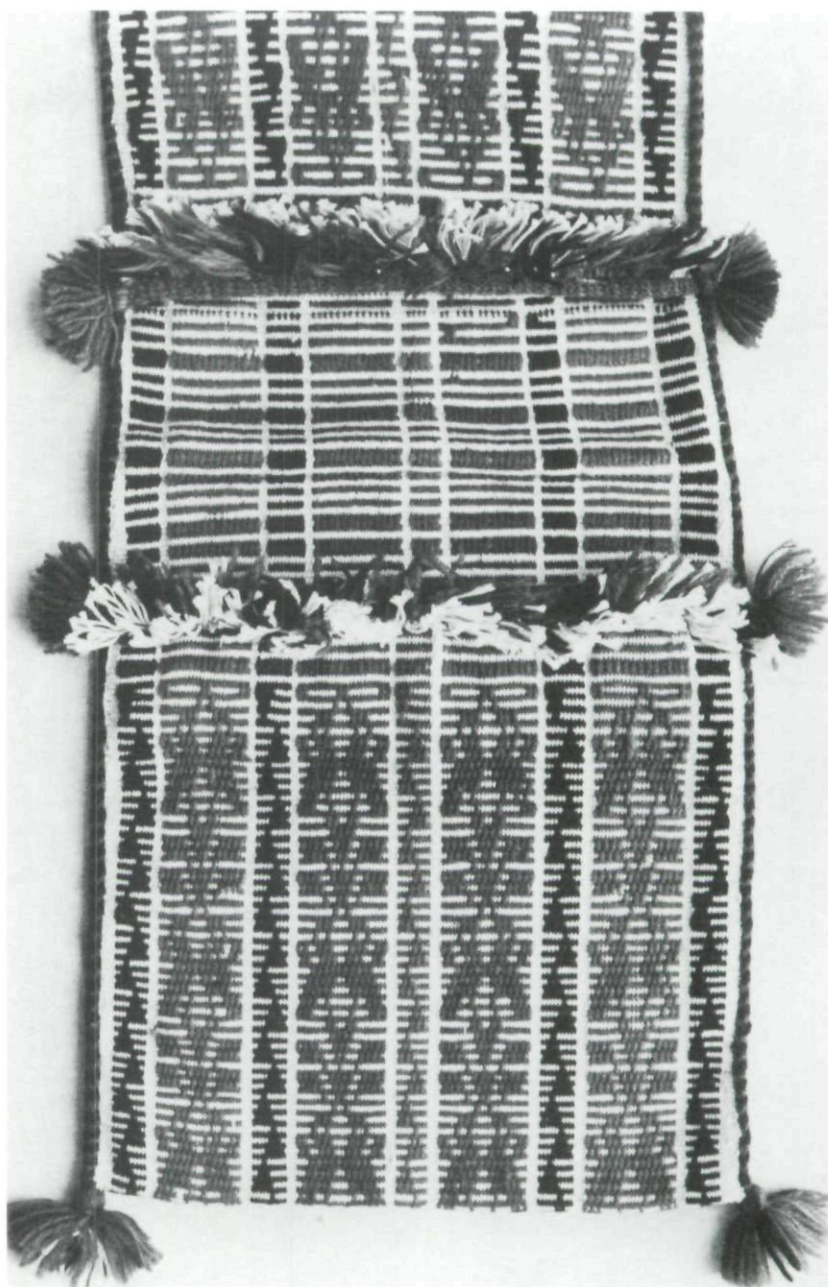


Fig. 5 A cotton and synthetic saddlebag with zoomorphic designs produced by floating the colored synthetic warp threads. The repeating design consists of two birds, beak to beak, in a tree. Bag woven by Isabela Lindao de Cruz.

and exclusively store bought, machine spun, synthetically dyed; orlon and other synthetic fibers are also used but usually for color or pattern accent only. One exception is the use of nylon weft thread in the hammocks, presumably to add strength to the fabric. All fabric woven by Isabela is warp-faced and decorated with simple warp stripes. The weavers of the Peninsula also make zoomorphic and geometrical designs on the pouches of the *alforjas* (Figs. 5 and 6). The woven structure of the

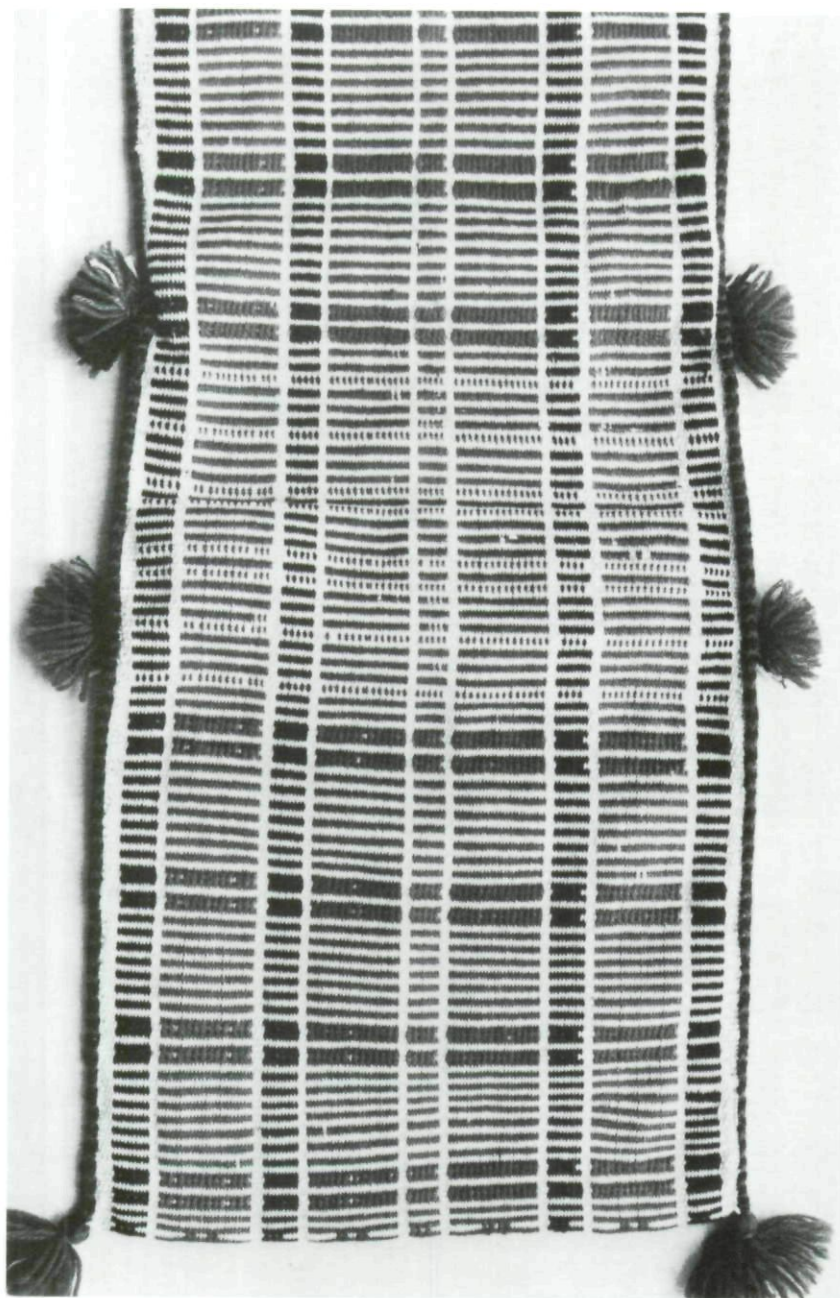


Fig. 6 Back side of the decorated saddlebag shown in Figure 5. The dark, horizontal bars in the upper and lower sections are produced by floating alternate, colored synthetic warp threads. The dotted horizontal rows in the single-layer mid-section show the reverse side of this structure, in which short white weft floats occur.

patterned *alforjas* is described by Emery as warp-faced simple alternating float weave on plain weave ground.²² On the Peninsula these designs are created by use of a pick-up stick to float selected warp threads. The designs in the fancy *alforjas* (*las labradas*) of Manabí, also of alternating float weave, are produced with extra heddle rods which lift the selected warp threads.²³

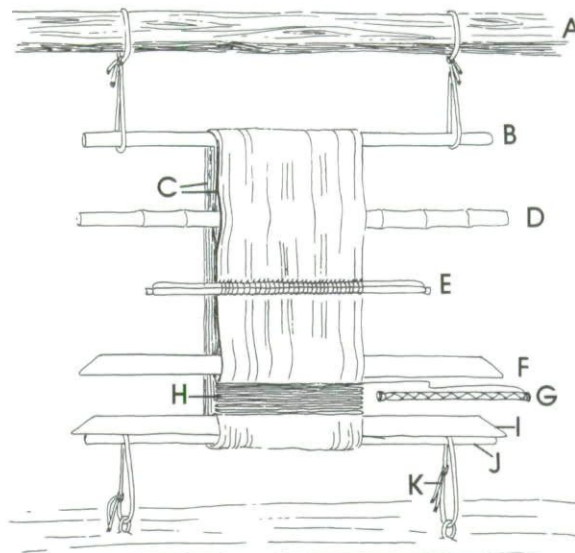


Fig. 7 A suspended two-bar vertical loom with a continuous tubular warp. A. Wall beam; B. Upper loom bar; C. Tubular warp; D. Shed rod; E. Heddle rod with heddle string and safety cord; F. Batten for beating in the weft; G. Bobbin/Shuttle with weft thread; H. Web; I. Heading batten; J. Lower loom bar; K. Knots to regulate tension.

Doña Isabela agreed to weave a saddlebag with warp stripe design accomplishing the entire process from the winding of the warp to the last finishing touch in the three days allotted to me. The thread had to be purchased in La Libertad, about one hour's drive from Tugaduaaja and the closest town with thread for weaving. I chose the colors and together we worked out the pattern of warp stripes. The white background warp thread was four-ply cotton, the same twine used by the shopkeepers for tying small parcels. The colored thread was two-ply pearl cotton, more expensive than the white twine and highly prized by Isabela. The weft thread, not visible in warp-faced fabric, was the same white background thread but was doubled by winding the two threads together onto the bobbin-shuttle.

THE LOOM

Doña Isabela weaves on a two-bar vertical loom; the upper bar is suspended in place by loops of rope attached to a high wall beam and the lower loom bar is lashed down by two ropes which pass through metal rings attached to the floor (Figs. 7 and 8).

Warp tension is controlled by adjusting the tautness of the two floor ropes while the upper bar remains stationary. The loom has no upright supports or permanently stationary

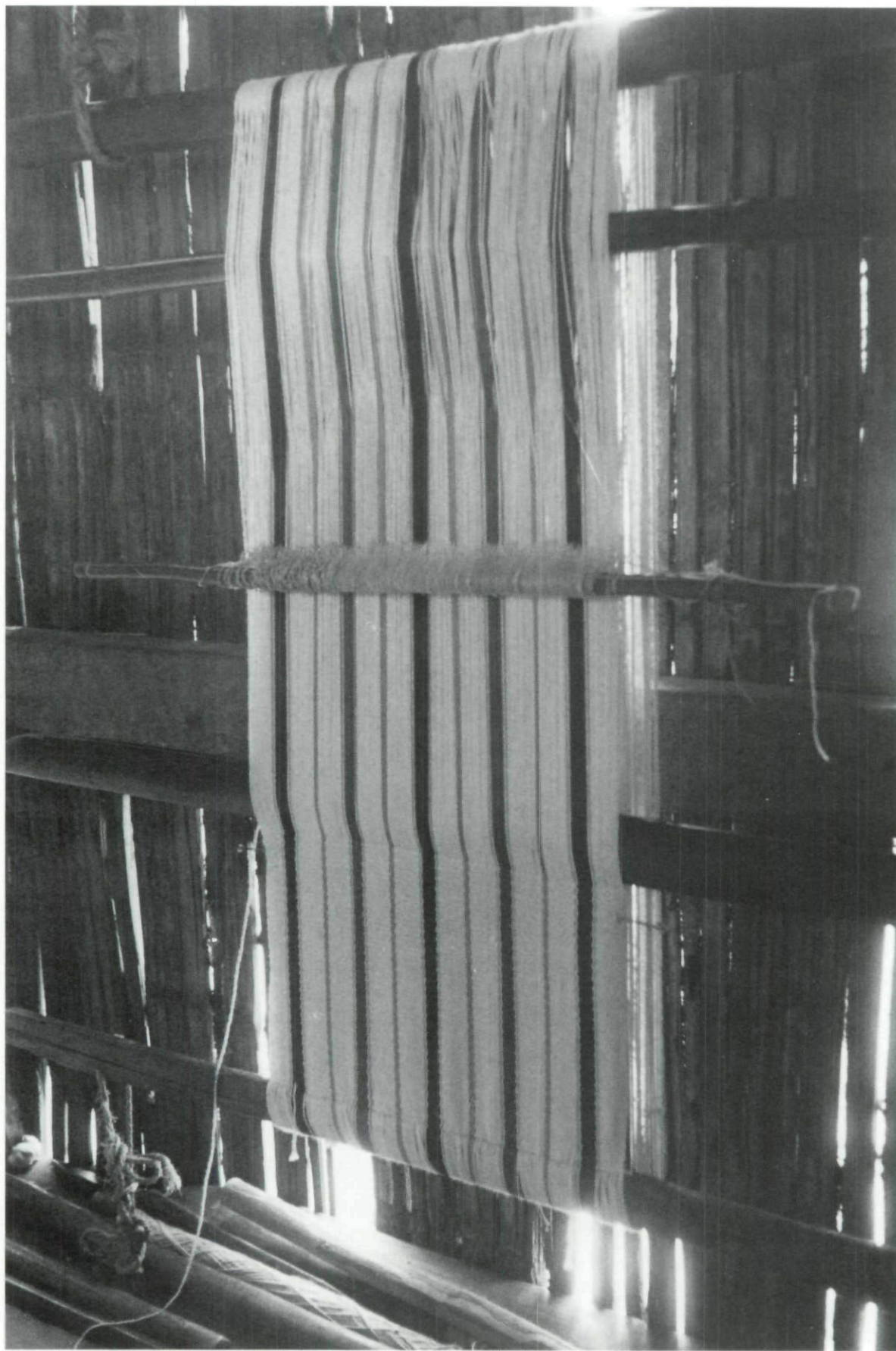


Fig. 8 Doña Isabela Cruz's loom with the bobbin/shuttle on the floor among extra loom rods.

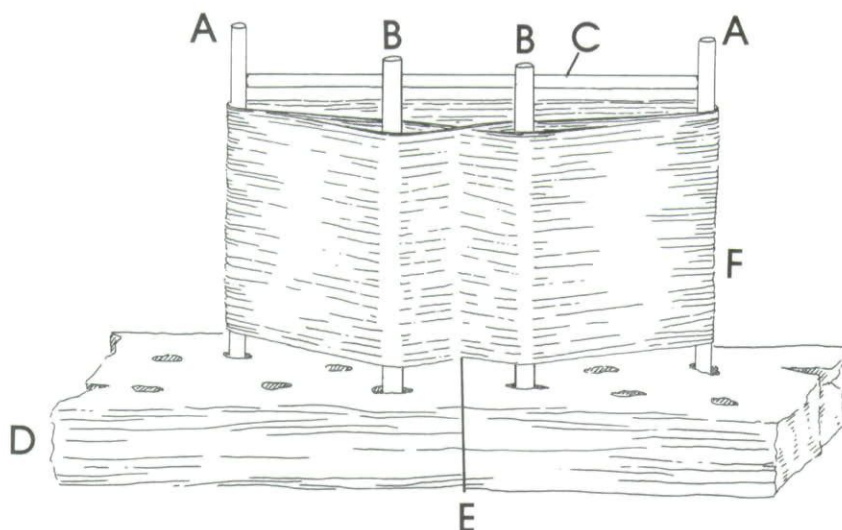


Fig. 9 A warping board with warp threads in place. A. End-posts; B. Lease-posts; C. Rod to maintain the vertical position of the end-posts; D. Balsa wood log; E. Lease (or cross) of the warp; F. Warp threads.

parts and when not in use appears as a collection of well polished rods and sticks lying on the floor. A continuous warp is applied in a tubular manner and the web is moved around the loom bars as weaving progresses so that the finished fabric is almost twice the length of the distance between the upper and lower bars.

WARP PREPARATION

The warping board (*balsa de urdir*) was a piece of balsa wood, which she inherited from her mother, approximately 120 cm long, 30 cm wide and 24 cm thick, with numerous holes in the surface to accommodate various placements of the four posts around which the warp was wound. In lieu of a diagram, written instructions, or measuring device, she referred often to a very old saddlebag as a pattern guide for measurements. By placing the saddlebag on the warping board she determined which holes to use for the two end posts that define the length of the warp, and hammered in one post at each end of the saddlebag. Then from her collection of rods and sticks piled on the floor she selected one to place horizontally between the two upright end-posts to maintain their vertical position throughout the winding of the warp. The two central lease-posts were hammered into the warping board anterior to and equidistant between the two end-posts. The cross or lease of the warp, which serves the vital purpose of keeping the warp threads in order as well as

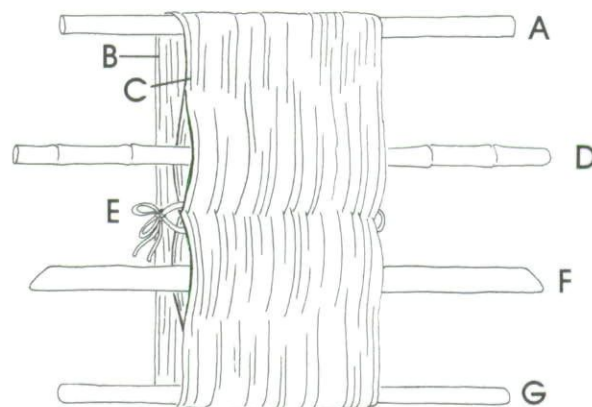


Fig. 10 Schematic representation of the dressing of the loom. A. Upper loom bar; B. Back layer of the tubular warp; C. Front layer of the tubular warp; D. Shed rod in shed rod shed; E. Lease cord; F. Heading batten in heddle rod shed; G. Lower loom bar.

creating the two separate sheds for plain weaving, was made between the lease-posts (Fig. 9). As the lease-posts were on a line approximately 15 to 17 cm anterior to the line of the end-posts the length of the warp was a little more than twice the distance between the two end-posts.

To wind the warp Doña Isabela began by tying the white background thread onto the left end-post, passing it between the central lease-posts (alternating its pathway with each successive pass to form the figure-eight configuration of the lease), around the right end-post and back to the left post. When it was time for a stripe she reversed the pathway of the colored thread, apparently an idiosyncrasy because the end result was identical. Throughout the winding of the warp the white thread was never cut and the first and last threads of each stripe were tied together; as a result the warp was continuous around the four warping posts.

The pattern of warp stripes was determined as the warp was being wound, with the position of the central stripe well planned to assure symmetry of color sequence. The old *alforja* was used to determine the width of the warp with dimension as the criterion; however, the colored threads of each stripe were carefully counted. When the winding of the warp was completed a lease cord was tied through the figure-eight cross to maintain shed separation and thread order during the dressing of the loom.

DRESSING THE LOOM

The warp was carefully removed from the

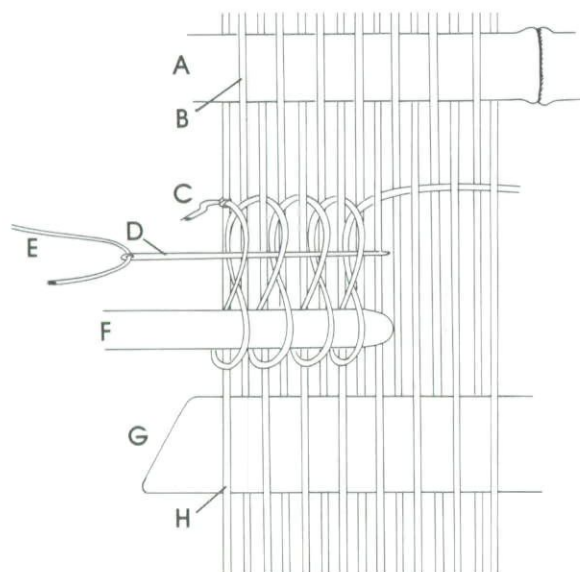


Fig. 11 Schematic representation of the heddling procedure. A. Shed rod in shed rod shed; B. Warp threads selected for the shed rod shed; C. Heddle string; D. Needle drawing safety cord; E. Safety cord; F. Heddle rod; G. Heading batten in heddle rod shed; H. Warp threads selected for the heddle rod shed.

warping board and the upper loom bar was inserted into the warp and then into the loops of rope attached to the high wall beam. The lower loom bar was inserted into the trough of the warp and the warp was adjusted to place the lease on the front layer of warp, equidistant between the upper and lower loom bars. The lower bar was lashed on either end with ropes that passed through metal rings on the floor. A bamboo shed rod about 2½ cm in diameter was inserted into the shed rod shed above the lease cord, and a batten was placed into the opposing shed below the lease to separate the warp threads until the heddling process was completed (Fig. 10). The lease cord was then removed.

Doña Isabela's technique for applying the heddles to the warp was similar to that of other weavers on native American looms. To wit, she used a continuous heddle string to embrace alternate warp threads and encircle the heddle rod across the entire width of the warp. Further, she used a safety cord which attached to both ends of the heddle rod to prevent the heddles from slipping off the end of the rod during weaving. However, her method differed in that the heddle string formed a figure-eight around the safety cord as it passed between the heddle rod and the warp thread (Fig. 11). This enclosing of the safety cord by the heddle string in a figure-eight configuration apparently served to

maintain equal heddle length, thereby creating a more precisely defined shed opening. Encircling of the safety cord by the heddle string was facilitated by the use of a large needle (13-15 cm long) into which the safety cord was threaded and moved along from left to right as heddling proceeded, leaving the cord in its place (Fig. 11).

The nylon heddle string was tied to the first warp thread on the left and the cone of thread was passed inside the heddle rod shed to exit at the right of the warp. The warp threads which opened the shed passed in front of the batten; therefore, to form each heddle the heddle string was drawn from inside the shed to the right of the first warp thread, over the needle, under the heddle rod and around it, back under the needle and then inside the shed, passing to the left of the second warp thread. After embracing the second thread the heddle string was drawn out between the second and third warp threads and the above process was repeated until all warp threads passing in front of the batten were entrapped by the heddle string (Figure 11). The safety cord needle and the heddle rod were held in the left hand and moved across the warp from left to right, while the heddle string was manipulated with the right hand. When heddling was completed the safety cord was tied to the heddle rod around the notch at the right end and the heddle string was tied around the rod and to itself.

WEAVING

The shuttle was simply an all-purpose rod about 35 cm long with notches near either end. The weft of doubled white cotton thread was wrapped two to three times around one notched end, spiraled down the length of the rod to the other end, wrapped a few times around that end and back, etc. In this manner the thread built up at both ends more than in the middle, facilitating the passage of the bobbin/shuttle through a narrow shed.

Tension was increased on the warp threads by tightening the floor ropes attached to the lower loom bar. The batten originally inserted to mark the heddle rod shed was pushed down to the bottom of the warp, in front of the loom bar, and left in place. This batten served as a heading to hold the first rows of weaving in place and to allow forceful beating of the weft. Later, as the web was moved around the loom bars, the heading batten was tightly juxtaposed to the first rows of weaving



Fig. 12 Doña Isabela at her loom.

by means of two cords tied to the lower loom bar. As weaving proceeded and the tubular warp was moved to keep the fell line at a height comfortable to the weaver, these cords were accordingly adjusted and retied. After the web passed over the upper bar the heading batten was removed as it was no longer necessary, and further, would have interfered with manipulation of the shed rod.

Doña Isabela sat cross-legged on the floor in front of her loom and weaving proceeded in a regular manner (Fig. 12). To open the shed rod shed, the shed rod was pushed down



Fig. 13 Doña Isabela opening the heddle rod shed by pulling on the heddle rod. A temple rod (*chiquigua*) is held in place on the reverse side of the web by small sticks that pierce the selvage just below the fell line.

to the heddle rod (midway between the upper and lower bars), a heavy batten with its knife-like edge downward was inserted into the open shed, turned on its side while the shuttle was thrown, and then turned back to beat in the weft with great force. After removing the batten from the shed rod shed and pushing the shed rod as high as possible, the heddle rod shed was opened by pulling heartily on the heddle rod with the left hand while pushing on the warp threads above and near the shed rod with the right hand to facilitate the shed change (Figure 13). Isabela then inserted the batten in the heddle rod shed, passed the shuttle through this shed and beat in the weft, as above. The maximum opening of the shed rod shed was 2 cm and the heddle rod shed was even narrower, requiring adroitness on the part of the weaver to find the shed unerringly. The width of the shed rod shed was restricted by the diameter of the bamboo shed rod and further by the short length of the heddles, which was the primary limiting factor of the heddle rod shed.

To maintain the web at a constant width Doña Isabela usually uses a special type of temple rod which she called *la chiquigua*. *La chiquigua* is a slender rod, with length equal to the width of the web, which has been hollowed out for about 2 cm at both ends. It is held in place on the reverse side of the woven fabric with small sticks which pierce the selvages and insert into the rod's hollow ends (Fig. 13).

Weaving of the tubular fabric continued until it was no longer possible to make a shed, leaving approximately 20 cm of unwoven

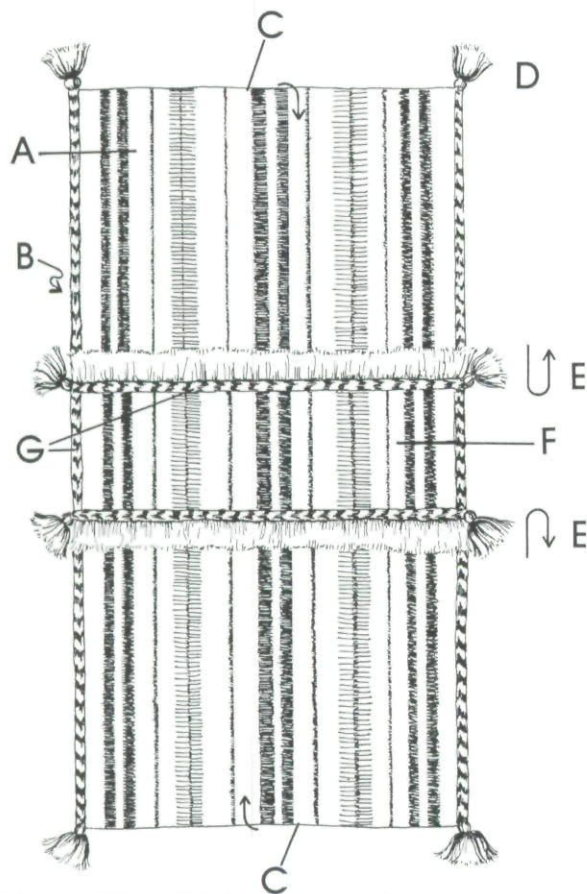


Fig. 14 The saddlebag. A. Pocket front (*la tapita*); B. Pocket back (*la barrillita*); C. Fold for pocket; D. Tassel (*la mota*); E. Fringe (*el fleco*); F. Mid-section (*la madrina*); G. Braid (*la trensa*).

warp. After removal of the web from the loom bars the warp threads were cut 4 cm from the fell line on either end, leaving thrums of 10-12 cm length in the heddles. Later, the 4 cm fringe became trim along the top edge of each pocket (Fig. 14) and the thrums were used to make tassels so that not a millimeter of thread was wasted. The finished web measured 105 cm by 30 cm.

As the finished product corroborates, Doña Isabela did not take great care with errors as the weaving proceeded. She was satisfied to snip off at the fell line loose warp threads or those not integrated into the weaving due to heddling or shedding errors. Only the colored threads of the narrow stripes were needle woven back into the web after its removal from the loom.

CONSTRUCTION AND FINISHING

Although Isabela did not have a term for each part of her loom and had no word for the weft

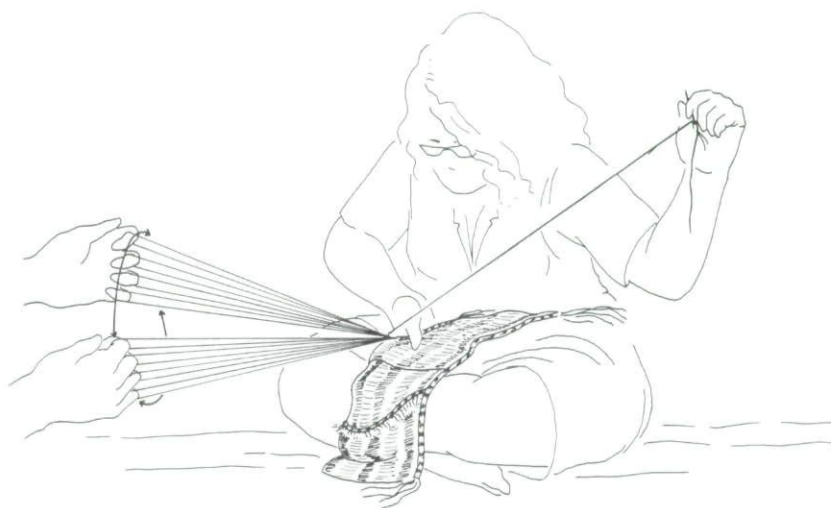


Fig. 15 Diagram showing how the two-strand warp twined edge binding is constructed by the loop manipulation technique. The warp threads are passed between the two hands at the left after each weft insertion. They are sewn simultaneously to the saddlebag with a needle and weft thread at the end of each tiny row.

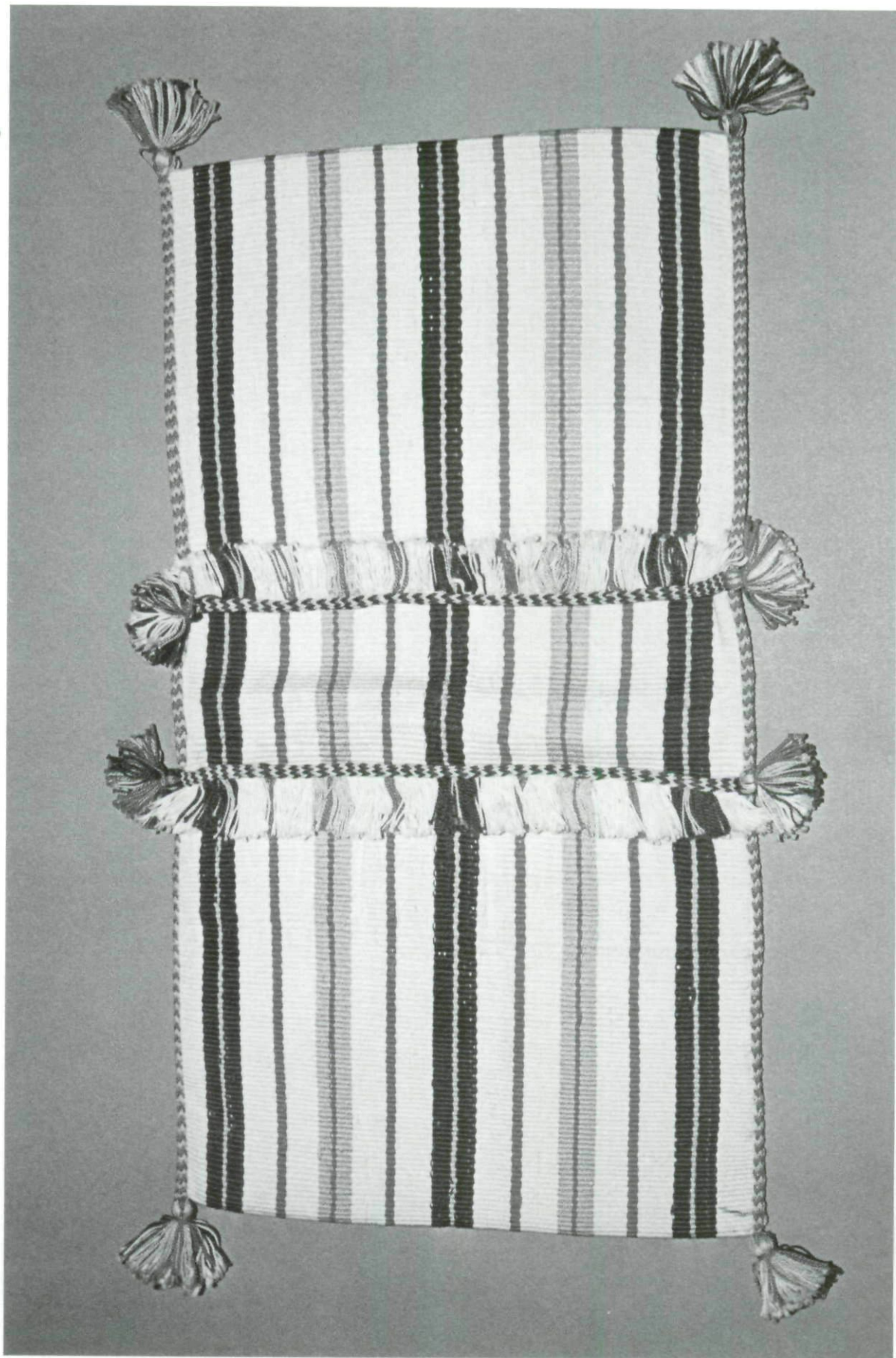
thread, calling it simply *la comida* (the meal), she used a precise term for each section of the *alforja*, pointing out that every part had a particular name (Fig. 14).

To construct the saddlebag, the center of the web was determined by folding it in half lengthwise. The length of the mid-section, which rests on the bicycle, was decided first and then the pockets were folded over on each end to leave a 9 cm, single-layer mid-section. The 4 cm fringe at either end was turned back and whipped down to form the trim along the top of each pocket opening. The pockets were formed by sewing the front and back sections with whipping stitches from the opening to the fold at the bottom of each pocket.

Using a loop manipulation technique, and with the assistance of her son, Isabela made a two-color, sixteen-strand warp-twined braid along both sides of the saddlebag and across the top of each pocket.²⁴ The warp elements consisted of eight pairs of thread (four of each color) in loop form. The weft element was white string threaded through a needle.

To construct the red and gold braid along one side of the *alforja*, Isabela determined that the length of each side of one loop of thread should correspond to the length of the *alforja* (57 cm) plus an extra measure (about 38 cm). She then held her hand approximately 95 cm from her foot and began looping the red thread from her hand and around her big toe, measuring off four loops of thread. She tied the beginning and end of the continuous red thread together and carefully laid it aside. She

Fig. 16 The completed cotton *alforja* woven by Doña Isabela Lindao de Cruz in Tugaduaaja on the Santa Elena Peninsula of Ecuador. The bag measures 57 cm by 30 cm.



then repeated the procedure with the gold thread. The result was a total of sixteen strands, each measuring approximately 95 cm as determined above, eight of each color in four loop configurations (Fig. 15).

To begin the warp twining process, her son took the four loops of each color and placed one loop over each finger, the gold threads on one hand and the red on the other. Doña Isabela held the opposite ends of the eight loops and using the threaded needle she whipped them to the edge of the saddlebag at the bottom of the pocket, leaving the beginning ends of the colored threads extending about 5 cm beyond the bottom of the pocket for inclusion in a corner tassel (Fig. 15). After whipping the eight gold threads to the edge, the son shifted the gold loops from the fingers of his left hand to the corresponding fingers of his right hand, and transferred the red loops in the opposite direction, passing one set of loops inside the other. Doña Isabela then inserted the weft thread between the layers of gold and red warp threads and passed the needle through the edge of the fabric. By sewing the weft thread through the *alforja* edge at the end of each weft insertion, and by shifting the four loops through each other in a consistent manner and always in the same direction, a symmetrical braid with the appearance of knitted stitches was constructed and attached to the *alforja*.

A brown and gold braid was made in exactly the same manner across the top of each pocket. Using the leftover warp threads removed from the heddles (thrums), Doña Isabela made eight tassels and tied one to each corner of the two pockets (Fig. 16).

ESTIMATION OF PRODUCTION TIME

Work began at 10 a.m. on the first day with the winding of the warp and continued until late afternoon, with about two hours off for lunch and household chores. Approximately 13 cm of weaving had been completed at the end of the first day. The sole light source for the house was small cans with cloth wicks fueled with kerosene; therefore, weaving was performed only in daylight hours. Isabela began weaving about 9 a.m. on the second day with an hour or so off for lunch. At 4 p.m. she stated that the web was complete and ready to be cut off the loom for finishing; however, when work commenced at 10 a.m. on the third day she decided to weave a bit more,

even though making a shed at this point was extremely difficult. By working without a lunch break, but with generous time given to talk and gossip with an old relative, she completed the *alforja*, with braid and tassels in place by 3 p.m. An approximation of time expenditure might be as follows: warp preparation and dressing of the loom — 3 to 4 hours; weaving time — 8 to 9 hours; finishing techniques, including braid and tassels — 4 hours.

COMMENTS

Based on a limited comparison among weaving techniques of the Ecuadorian coastal zone (defined as the lowlands west of the mountain massif), we can identify a coastal tradition which contrasts with the better known traditional weaving of the highlands of Ecuador.

It is surprising that the backstrap loom, ubiquitous among native American weavers since prehistoric times and still common in the Ecuadorian highlands,²⁵ is not known on the coast. Further, the coastal looms described here differ from the two-bar vertical looms with rigid uprights which are well documented for the Andean region in both the prehistoric²⁶ and modern periods.²⁷ Most of the indigenous American loom types produce a four-selvage, flat textile that is removed from the loom without cutting the warp threads. The majority of these fabrics are woven in a single layer with the web length determined by the distance between the upper and lower loom bars, although some native American vertical looms and the highland Ecuadorian backstrap loom have a continuous warp that turns back over a locking bar or cord so that a flat, four-selvage textile is produced when the locking bar is removed.²⁸

In contrast, the suspended two-bar vertical loom on which a continuous warp is woven in a tubular manner is peculiar to the coastal zone of Ecuador. On the Santa Elena Peninsula, in Manabí,²⁹ and among the Cayapa Indians of Esmeraldas,³⁰ the warp thread passes continuously around the two loom bars in a circle and the web is cut from the loom to make a flat, two-selvage textile. Although data are missing for the Colorado Indians (also a coastal group), it is likely that they also use a circular warp since at least one Colorado textile (TM 1969.17.1) has cut warp ends bound off in the same manner as the Cayapas.³¹

The methods of coastal weavers also differ from others with respect to the application of

heddles. The usual method used for backstrap and other indigenous looms is to pass the heddle string directly over the heddle rod between each warp thread enclosure.³² In contrast, Isabela employed the auxiliary step of encircling the safety cord attached to the heddle rod with a figure-eight configuration,

probably insuring a more equal heddle length and tension throughout the weaving process. This practice is found in Manabí, and a similar technique is reported among the Cayapa, except that the heddle string encircles two flexible heddle rods in a figure-eight, rather than a heddle rod and safety cord.

JANE PARKER HAGINO

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